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Food-Aid Grain Needs Are Down—In the Short Run

Sixty-five developing countries would need 9 million tons of grain food aid in 1996/97 to maintain per capita consumption at the previous 5-year average. But that figure is down 5 million tons from 1995/96 aggregate needs. In a study of 65 major food-aid recipient countries, USDA's Economic Research Service also found that the "grain deficit" is down in all eight regions covered by the study.

Favorable weather and expanded plantings allowed low-income countries to maintain recent consumption levels while reducing imports and avoiding the high prices in international grain markets in 1996. Concomitantly, several donor countries have recently reduced their food aid commitments, due mostly to tight budgets.

Despite narrower grain deficits, the magnitude of some regional grain deficits remains high. In 1996/97, the greatest aggregate deficit (reflecting the amount of grain needed to maintain per capita cereal

consumption at the recent 5-year average) is expected in *Asia* at an estimated 3.5 million tons. This is down from 4.6 million tons a year earlier, due to strong economic growth, favorable agricultural policies, and good weather. *Sub-Saharan Africa's* estimated grain gap of 3.4 million tons is down sharply from last year's 6.2 million tons due to a record grain harvest, particularly in southern Africa, and to the end of civil strife and the re-emergence of agricultural production in Ethiopia and Mozambique.

The expected grain gap for *Latin America and the Caribbean* countries is down from 1.4 to 0.8 million tons, reflecting strong economic growth and the growing ability to import food on a commercial basis. *North Africa* is not expected to have a grain deficit this year, due primarily to a large recovery in grain production, which increased from 18.4 to 31.2 million tons.

Assessing the Problem

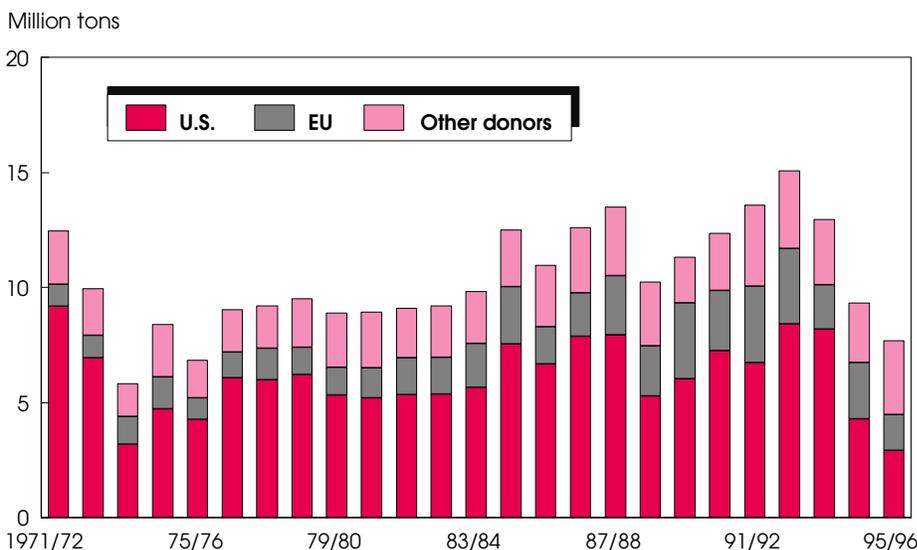
Despite the widespread reduction in grain deficit, many low-income countries remain highly vulnerable to food shortages, in both the long- and short-term, indicated by low and often declining per capita grain consumption and high con-

sumption variability. Although aggregate consumption from 1980 to 1995 grew steadily in all the study countries except those experiencing civil disorder (e.g., Burundi, Rwanda, and Afghanistan) or major economic disruptions, per capita consumption of cereals fell in nearly half (30) of the countries.

Falling per capita grain consumption is primarily a result of rapid population growth outpacing the growth in aggregate supply, due in part to slow or declining growth in agricultural productivity and poor economic growth. In the short run, declining per capita consumption likely indicates that a country lacks the resources to cope with shortages caused by temporary declines in domestic production or increases in world grain prices. As a result, aggregate grain consumption can vary considerably.

Another measure of a country's vulnerability to food shortages is the estimated grain gap expressed as a percent of the grain required to maintain per capita cereal consumption. A high percentage indicates that a country's domestic cereal supply (including commercial imports) is insufficient to maintain recent consumption levels. The higher the percent, the more vulnerable the country, and the

Food Aid Donations of Grain Have Fallen Sharply Since 1992/93



Marketing year (July-June); 1994/95 and 1995/96 estimates.
Source: FAO Agrostat.
Economic Research Service, USDA

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Sub-Saharan African Countries Report the Largest Grain Deficits

Region Country	Per capita grain use		Grain gap 1996/97	Grain share of diet %	Region Country	Per capita grain use		Grain gap 1996/97	Grain share of diet %
	5-year average	1996/97				5-year average	1996/97		
	<i>Kg</i>	<i>% of 5-year average*</i>				<i>Kg</i>	<i>% of 5-year average*</i>		
North Africa					Southern Africa				
Algeria	170	100	0	56	Angola	73	84	16	35
Egypt	192	100	0	64	Lesotho	116	88	12	78
Morocco	181	100	0	57	Madagascar	113	89	11	55
Tunisia	214	100	0	54	Malawi	164	100	0	70
Central Africa					Asia				
Cameroon	80	94	6	39	Afghanistan	169	61	39	76
Cent. Afr. Repub.	38	90	10	19	Bangladesh	156	93	7	84
Zaire	36	92	8	16	India	156	93	0	63
West Africa					Latin America & Caribbean				
Benin	107	92	8	37	Bolivia	91	87	13	40
Burkina Faso	202	97	3	76	Colombia	99	99	1	32
Cape Verde	224	19	81	57	Dom. Repub.	58	100	0	31
Chad	138	95	5	55	El Salvador	142	100	0	56
Cote d' Ivoire	93	96	4	37	Guatemala	128	86	14	60
Gambia	190	82	18	65	Haiti	102	80	20	43
Ghana	84	90	10	31	Honduras	89	80	20	50
Guinea	129	88	12	52	Jamaica	89	77	23	34
Guinea-Bissau	186	88	12	64	Nicaragua	122	81	19	48
Liberia	88	14	86	45	Peru	90	96	4	43
Mali	194	96	4	73	Newly Independent States				
Mauritania	167	81	19	55	Armenia	134	55	45	45
Niger	240	99	1	74	Azerbaijan	121	71	29	57
Nigeria	164	100	0	43	Georgia	143	52	48	52
Senegal	162	93	7	56	Kyrgyzstan	138	100	0	48
Sierra Leone	79	70	30	54	Tajikistan	115	50	50	59
Togo	115	89	11	48					
East Africa									
Burundi	41	66	34	20					
Eritrea	100	58	42	73					
Ethiopia	114	95	5	69					
Kenya	119	93	7	50					
Rwanda	41	31	69	19					
Somalia	63	69	31	55					
Sudan	144	93	7	59					
Tanzania	114	100	0	46					
Uganda	73	100	0	35					

*The previous 5-year average per capita grain consumption (1991/92-1995/96) represents the target for 1996/97. The 1996/97 per capita consumption rate and grain gap are measured as a percent of the 5-year average consumption.

Economic Research Service, USDA

more likely it is to require external assistance to maintain recent consumption levels. Nearly three-fourths (48) of the 65 study countries had a grain gap in 1996/97. Of these, 13 countries have a grain-gap-to-consumption ratio greater than 25 percent, indicating significant vulnerability to a food shortage.

The grain gap of many low-income countries varies from one year to the next, reflecting high consumption instability. During 1960-95, grain consumption instability tended to be highest among the countries of Sub-Saharan Africa—where countries experiencing declines in per capita cereal consumption are also concentrated—followed by the countries in North Africa, Latin America and the Caribbean, and Asia.

Several factors, such as declines in domestic production which lead to a combination of declining growth and high variability in grain consumption, make Sub-Saharan Africa highly vulnerable to

food shortages. In Lesotho, for example, annual per capita grain consumption is expected to fall from 141 kg in 1995/96 to 116 kg in 1996/97. The high degree of

variability in consumption could cause it to fall by as much as 30 percent once every 6 years.

Production variability is a major factor in the instability in cereal consumption in most low-income countries. Production variability (via swings in both yield and cultivated area) is the result of weather variability, civil strife, and/or shortage of important inputs such as fertilizer. Large and frequent below-trend deviations in cereal production pose a significant problem, especially for countries with a history of chronic food deficit and where cereals comprise a large share of the average diet.

Over the 1980-95 period, production variability was highest in North and Sub-Saharan Africa, followed by Latin America and the Caribbean, and Asia. Asia's relatively lower production variability can be attributed in part to more widespread use of irrigation. In 1992, 38 percent of arable land in Asia was irrigated, while in Latin America and Africa the proportions were only 12 and 7 percent.

Variability of production increases the vulnerability of countries that are already experiencing a declining per capita consumption trend. For example, Somalia's high variability in production can be expected to cause its grain gap to range from 3 to 59 percent of the amount of grain needed to maintain average consumption. The problem is often complicated by lack of resources and infrastructure needed to deal with large grain shipments.

Shortfalls in domestic production can be offset by commercial food imports, when viable, thereby easing the effect on food consumption. For example, a rise in export earnings from 1990-94 has permitted Indonesia to increase imports and raise grain consumption by 5 percent per year despite declining domestic grain production.

However, many developing countries lack the financial capacity to undertake needed commercial imports, with export earnings low relative to import expenditures. Export earnings by Sub-Saharan Africa declined by 0.4 percent per year from

Measuring the Grain Gap

The grain gap, or grain deficit, is calculated as the difference between target grain consumption—based on the most recent 5-year average per capita consumption—and available grain supplies. Grain supplies combine the current year's domestic production and a country's financial ability to import on a commercial basis after adjusting for stock changes and nonfood use.

In a series of food aid needs assessments, USDA's Economic Research Service (ERS) provides estimates of the grain deficits of 65 selected historical food aid recipient countries, in eight regions: Central Africa (3 countries), East Africa (9), North Africa (4), Southern Africa (8), West Africa (17), Asia (9), Latin America (10), and the Newly Independent States of the former Soviet Union (5).

The estimates include only the major grains (i.e., barley, corn, millet, oats, rice, rye, sorghum, wheat, and other minor coarse grains), referred to as "grains" or "cereals," for which data are readily available. Thus, only the major cereals' share of a country's diet is evaluated for changes. Accurate estimates of the supplies of noncereal foods such as grain legumes (or pulses), roots and tubers, vegetable oils, milk, and other animal products frequently are not available for many countries. However, these commodities play a crucial role in the average household diet in many less developed countries, particularly in the lower income strata that are generally the most vulnerable to food shortages.

The grain deficits are reported by ERS as the assessed shortrun food needs of the 65 study countries. Since noncereal foods are excluded, the grain deficit serves as an indicator of the potential food needs of a country, but falls short of measuring the actual food needs and may overstate or understate the magnitude of food shortfalls. However, in many low-income countries cereals account for at least 50 percent of all calories consumed. In addition, the bulk of food imports by the countries, as well as international food aid, is in the form of cereals.

1990 to 1994. During this period, for example, Rwanda's export earnings declined by 10 percent per year, severely reducing its import capacity at a time when domestic food production was contracting. As a result, Rwanda's dependency on food aid to meet its grain gap grew substantially. By 1994, food aid receipts accounted for nearly 84 percent of Rwanda's grain supply, up sharply from only 5 percent in 1990.

Food Aid Funding Declines

In many low-income countries, food aid assistance is often needed to cushion a decline in consumption caused by food shortages and to help bridge the estimated grain gap. While food aid plays an important role in reducing food insecurity in developing countries, it often remains inadequate to offset the full magnitude of need. In 1995/96, grain shipments received as food aid accounted for only

47 percent of the estimated grain required to maintain per capita grain consumption.

Production in many of the historical food-aid-recipient countries rebounded at the time when import prices increased sharply and food aid budgets were being reduced. The U.S. and the European Union (EU) historically have supplied about 75 to 85 percent of the world's grain food aid—grain generally accounts for more than 80 percent of total food aid. Japan has supplied nearly 10 percent, while Canada accounts for less than 5 percent, and Australia ships around 2 percent.

Budgetary pressures in the major donor countries have been evident in the steadily declining food aid shipments over the past 3 years. In the U.S., funding for the P.L. 480 program in fiscal 1996 was about \$1.2 billion, down by 8 percent from 1995. In fiscal 1997, appropriations

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are down another 7 percent to \$1.1 billion. Other major food aid donors have also reduced their food aid budgets.

The declining trend in food aid funding is aggravated by price spikes that result from unexpected production shortfalls. Price increases imply a smaller volume of food aid shipments. It is relatively easier for donors to provide food aid when international commodity prices are lower than their domestic support prices, as was the case with the U.S. in the early 1980's and the EU in most years. When international commodity prices increase and stocks are low, food aid becomes more costly for the donors.

The most recent increase in international grain prices (1995/96) was caused by a combination of unexpectedly lower production—largely a result of removing a substantial share of 1995 acreage from production, shifts in acres to other crops, and poor weather conditions in several of the major grain exporting countries—and

a sharp reduction in global grain stocks. The hike in international grain prices coincided with favorable grain production performance in most of the 65 countries in the study. However, in eight countries the high food prices coincided with production shortfalls, causing greater food insecurity and raising the grain deficit.

Despite fiscal constraints and tightened commodity availability, the U.S. continues to give high priority to its food aid program and is expected to meet its commitment of 2.5 million tons in 1996/97 under the Food Aid Convention. Food aid donors are focusing their efforts on improving the cost-effectiveness of food aid by targeting the neediest groups and by looking for ways to reduce distribution costs so that a larger share of the budget can go toward purchasing food. Recipient countries will benefit most if food aid is specifically targeted to vulnerable segments of the population.

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Upcoming Reports—USDA's Economic Research Service

The following reports will be issued electronically on dates and at times (ET) indicated.

March

- 3 *Wheat Yearbook**
- 4 *Aquaculture (3 pm)*
- 12 *Cotton & Wool Outlook (4 pm)***
- Feed Outlook (4 pm)***
- Oil Crops Outlook (4 pm)***
- Rice Outlook (4 pm)***
- Wheat Outlook (4 pm)***
- 19 *Agricultural Outlook**
- 20 *Livestock, Dairy, & Poultry (12 noon)*
- 21 *Feed Yearbook**
- 24 *U.S. Agricultural Trade Update (3 pm)*
- NAFTA**
- 25 *Fruit & Tree Nuts**
- 28 *Newly Independent States Update**

*Release of summary, 3 pm.

**Available electronically only.